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IN THE

Supreme Court of the United States

OCTOBER TERM, 1954

No. 664

DARSYN LABORATORIES, INC.,
Petitioner,

vs.

LENOX LABORATORIES, INC., GAMMA CHEMICAL CORP., IRVING BIBER, BENJAMIN PECHERER, JOHN ROBSON, J. ROBERT FISHER and WILLIAM GERLACH,
Respondents.

PETITION FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE THIRD CIRCUIT

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To the Honorable The Chief Justice and Associate Justices of the Supreme Court of the United States:

Your Petitioner, Darsyn Laboratories, Inc., a corporation, respectfully prays that a Writ of Certiorari issue to the United States Court of Appeals for the Third Circuit to review the decision of that Court affirming the judgment of the United States District Court for the District of New Jersey holding that Petitioner's United States Letters Patent No. 2489,530, dated November 29, 1949 is valid but not infringed, and further holding that the Court did not have jurisdiction of an allegation of unfair competition, coupled with Petitioner's assertion of patent infringement.

Petitioner brought suit in the District of New Jersey against Respondent, Gamma Chemical Corp., for infringement of aforesaid Letters Patent, and brought suit against all of the Respondents for conspiracy to violate and for violation of Petitioner's trade secrets relative to a process for the production of a substance, namely, hydroxy-quinoline, which is covered by the process claims of said patent.

The District Court rendered a decision upholding the validity of the patent, holding that there was no infringement thereof and dismissing the Petitioner's complaint relative to violation of trade secrets on the ground of lack of jurisdiction. The opinion of the District Court is found at 120 F. Supp. 42 (p. 23 herein).

Upon appeal to the Court of Appeals for the Third Circuit, a decision was rendered and entered on December 23, 1954, affirming the decision of the District Court without opinion. The decision of the Court of Appeals is found at 217 F. (2d) 648 (p. 22 herein).

Jurisdiction of the Supreme Court

Petitioner believes that this Court has jurisdiction of the present matter by virtue of Rule 19 of the "Revised Rules of the Supreme Court of the United States", effective July 1, 1954. In accordance with sub-rule 1 (b), this Court has jurisdiction in a case where a Court of Appeals has rendered a decision in conflict with the decision of another Court of Appeals on the same matter. In the present instance, the Court of Appeals of the Third Circuit has rendered a decision which is in conflict with decisions of the Courts of Appeals of the Second, Fourth and Ninth Circuits.

Further, under said sub-rule, this Court has jurisdiction where a Court of Appeals has decided an important question of Federal law which has not been, but which should be, settled by this Court. In the present case, the

Court of Appeals for the Third Circuit has rendered a decision with respect to the law at 28 U.S.C.A. 1338 (b) which is in direct conflict with a recent decision by the Court of Appeals for the Second Circuit. As far as Petitioner can determine, this Court has not directly interpreted this law.

Questions Presented

1. Under 28 U.S.C. 1338 (b) which states that—

> "The district courts shall have original jurisdiction of any civil action asserting a claim of unfair competition when joined with a substantial and related claim under the copyright, patent or trademark laws"

is a "related claim" of unfair competition restricted to the exact subject matter of the process claims of a patent, or does the "related claim" include other steps of the process and equipment which contribute to and are necessary for obtaining the final product contemplated by the patent?

2. Does the federal court have jurisdiction of a charge of unfair competition in the appropriation by a Respondent of Petitioner's trade secrets in a two-stage process for converting quinoline to hydroxy-quinoline, where there is no diversity of citizenship, but where it is coupled with a charge of infringement of a patent covering the second stage of the process?

3. Does the Petitioner surrender its rights in its trade secrets by permitting a patent to issue describing some but not all of said trade secrets; and where a Respondent had appropriated said trade secrets prior to the issuance of said patent can said Respondent be held liable for such appropriation?

4. Is Petitioner's charge of unfair competition against a Respondent for violation of Petitioner's trade secrets inconsistent with Petitioner's charge of patent infringement against said Respondent, insofar as both charges

relate to the same period of time; or, can the Petitioner sustain both such charges?

5. Does the federal court have jurisdiction of Petitioner's charge of unfair competition where only one of the Respondents is charged with patent infringement and Petitioner alleges a conspiracy between all the Respondents to appropriate and violate Petitioner's trade secrets?

6. May the court interpret the wording of a patent claim to narrow its scope beyond the normal and obvious meaning of the words used, where such narrow interpretation is not warranted by the patent specification; specifically where the patent claim recites "*heating* said mixture to a temperature of 250° C. to 290° C." and adding another constituent to enter into a reaction, and the reaction is exothermic, may the court restrict the scope of the claim to *maintaining* the temperature within said range throughout the exothermic reaction?

Facts in the Case

At the end of 1945 and the beginning of 1946, through the co-inventors of the patent in suit, namely, Grier and Casalbore, Petitioner developed a two-stage operation for the production of hydroxy-quinoline. In the first stage, quinoline is reacted with sulphuric acid to form quinoline sulphonic acid, and in the second stage the quinoline sulphonic acid is reacted with sodium hydroxide to form the final product, namely, hydroxy-quinoline. The entire process was kept secret by Petitioner and a number of secrets were involved. In the first stage of the operation, there were the following secrets.

1. Conducting the reaction without any heating of the reaction vessel.

2. Using a ratio of four parts sulphuric acid to one part quinoline and allowing the temperature to be maintained between 130° and 180° C.

3. Quenching the quinoline sulphonic acid in water while it was at a temperature of 65° C.

The trade secrets relative to the second stage of the operation are as follows:

1. The arrangement of the reaction pot with the various elements associated therewith.

2. Conducting the reaction between quinoline sulphonic acid and sodium hydroxide in the non-melted state.

3. The use of an agitator in conjunction with a hood and a removable stirrer in the reaction pot.

4. Cutting off the heat from the reaction pot after the sodium hydroxide reached reaction temperature.

5. Conducting the reaction for a short period of time, only a few minutes.

6. Quenching the product while it is at approximately reaction temperature.

7. Neutralizing the product with an acid while the product is above the melting point of hydroxy-quinoline.

8. The use of a reaction temperature above 290° C. and below the melting point of either of the reactants or the reaction product.

9. Pre-heating the sodium hydroxide before the quinoline sulphonic acid is added to the reaction pot.

Respondent Biber was instrumental in organizing the Petitioner corporation and was President thereof up to the time he severed his connection with Petitioner. Biber learned all of the above secrets by his close contact with the development and the operation of the processes and his knowledge of chemical procedures, since he is a chemist and for many years has been engaged in pharmaceutical manufacture.

He severed his connection with Petitioner at the end of 1946, selling his stock at a substantial profit at a time when the earnings were very small. He agreed orally on his word that he would not divulge the processes of Petitioner nor any of its trade secrets. However, shortly thereafter he formed Lenox Laboratories, Inc., together with Respondents Pecherer and Gerlach. Said corporation made and sold hydroxy-quinoline, utilizing Petitioner's processes and trade secrets which had been learned by Biber.

In October, 1949, Respondent Lenox sold all of its assets to Respondents Robson, Fisher and Zempliner, the latter not having been served. Robson prior to such purchase knew that the trade secrets were the property of Petitioner but, after witnessing the demonstration of the operation in the plant of Lenox, these three individuals purchased the assets of Lenox. Fisher, prior to such purchase, also knew of Petitioner's claim of trade secrets which had been appropriated by Lenox, Biber, Pecherer and Gerlach.

Simultaneously with the purchase of the Lenox assets in October, 1949, Gamma Chemical Corporation was formed and it continued the operation of the Lenox plant with no changes in either the process or in any of the trade secrets. All of the Respondents recognized that this process was the property of Petitioner, as is seen from the agreement of October, 1949 between the Respondents wherein all of said Respondents agreed that the process was secret and also agreed not to divulge the process to any outsiders.

In January, 1948, Petitioner filed an application for patent for step two of the two-page process described above. The prior art in attempting to accomplish the same result, melted quinoline sulphonic acid with sodium hydroxide, as a result of which the yield was so low that it never went into commercial use. However, Petitioner's process gives a yield as high as 90% to 95%.

Petitioner's patented process consists in first heating sodium hydroxide to a temperature of 250° to 290° C., which is below the melting point thereof, said melting point being about 320° C. Then the *heat is cut off* and quinoline sulphonic acid is added with stirring. Water is introduced into the system in an amount less than 4% and the addition thereof may be in any number of ways, either directly, partly in the sodium hydroxide or partly in the quinoline sulphonic acid. *The reaction is exothermic and the amount of heat liberated is sufficient to raise the temperature about 30° C.* Some heat is lost by radiation so that the final temperature is below the melting point of the reactants and of the product even though the starting temperature was 290° C. The temperature is high enough so that the reaction goes substantially to completion.

The previous commercial processes used for making 8-hydroxy-quinoline were very expensive and the product sold for from $8 to $12 per pound. The present process has displaced all others and the selling price of the hydroxy-quinoline is about $3.00 per pound. All the other manufacturers by the old processes are out of business.

The following claim of the patent in suit may be considered as typical:

> "11. A method which comprises providing divided sodium hydroxide, adding thereto 0.5 to 4% of water, heating said mixture to a temperature of 250° C. to 290° C., introducing a compound taken from the group consisting of quinoline-8-sulfonic acid and its alkali and alkaline earth metal salts into said mixture, the ratio of sodium hydroxide to said sulphonic acid being 1.2-2 to 1, and agitating the same while maintaining the reactants in the semi-solid state, whereby the sodium salt of 8-hydroxy quinoline is formed."

Respondent, Gamma, in its operations follows all of the details of this claim. Gamma heats the sodium hydroxide to a temperature which at times is considerably higher

than 290° C., then cuts off the heat as Petitioner does. Then there is added not only the quinoline sulfonic acid but also *an amount of cold inert sodium sulphate* which is sufficient to normally cause *a drop in temperature of about 30 C.* Therefore, Gamma has used the equivalent of Petitioner's temperature range by first heating the sodium hydroxide to, say, 315° C., and adding sufficient sodium sulphate to drop the temperature to about 285° C. The *sodium sulphate has no function except that it is an inert diluent capable of reducing temperatures and preventing the mass from becoming molten.*

All of the other details set forth in the claim are used by Gamma. For instance, the amount of water present is 1.65%. The ratio of sodium hydroxide to quinoline sulphonic acid is 2 to 1. Agitation is used and the time of the reaction is short, being from 5 to 15 minutes. The reaction mass is semi-solid and it not fused.

Respondent, Robson, admitted in a deposition before trial that the process used by Gamma was substantially identical with the process acquired from Lenox. In addition, Petitioner inspected the operation of the Gamma plant and its witness Grier testified that all Petitioner's secrets enumerated above were used in the operation.

Petitioner's patent issued on November 29, 1949, after Gamma had been in operation for over a month. Petitioner then brought suit for infringement of the patent by Gamma and for unfair competition by all the Respondents by reason of a conspiracy by them to violate Petitioner's trade secrets.

The District Court made the following holdings:

1. That as to Gamma, the two causes of action are inconsistent and that the issuance of the patent dedicates everything disclosed therein to the public, including Gamma, in spite of the fact that Gamma had obtained the process by the aforesaid conspiracy.

2. That the Court had no jurisdiction of the charge of unfair competition because there was no diversity of citizenship of the parties.

3. That the first stage of Petitioner's process was not given any consideration, on the ground that it was not related to the charge of patent infringement within the statute.

4. The Court held the patent to be valid but not infringed.

On appeal from the decision of the District Court, the Court of appeals for the Third Circuit, in a judgment entered December 23, 1954 affirmed the District Court's decision and adopted the opinion of the District Court as its own.

The basis of the jurisdiction of the District Court was the patent laws appearing at 35 U.S.C., Sections 1 to 293 and 28 U.S.C. Section 1338 (b).

Arguments

Petitioner has formulated questions 1 to 5 which are based upon an interpretation of 28 U.S.C. 1338 (b). As far as Petitioner is aware, this statute has not been specifically interpreted by this Court. The decision in this case by the Court of Appeals is directly contrary to *Franke et al.* v. *Wiltschek et al.* in the Court of Appeals for the Second Circuit.

In the present case the Court made the following statement:

> "The claim of unfair competition is predicated on the charge that these defendants illegally acquired and converted to their own use certain trade secrets of the plaintiff, to wit, an improved sulfonation process which is not covered by a patent, and several of the specific steps of the hydrolysis process disclosed by the patent in suit. These processes are not merely the successive steps in a unit process;

> they are, as we heretofore stated, separate and distinct processes. The claim of unfair competition is obviously based upon two separate and distinct causes of action, the violation of two separate and distinct rights derived from different sources. This Court has jurisdiction of one but not of the other." (pp. 42-43 herein)

The first stage in the process is the sulphonation of quinoline to form quinoline sulphonic acid. This step is essential because in the next stage, the quinoline sulphonic acid is reacted with sodium hydroxide. The Court of Appeals did not consider that the first step was related to the second stage of the operation, but it is clear that without the first step, the reaction to form hydroxy-quinoline could not be performed. Therefore, Petitioner considers that the sulphonation step is related to the charge of patent infringement of the second stage and that the law contemplated this.

The District Court's decision also made the following statements:

> "The trade secrets, if any, disclosed in the specifications and not claimed as elements of the invention, were dedicated to the public under the patent laws. * * * The patentees had a right, independent of the patent laws, to hold and use their process as a trade secret. They surrendered this right, however, upon full disclosure of their process in return for the patent monopoly. The claim of unfair competition and the claim of infringement are clearly inconsistent insofar as they relate to the same period of time.
>
> The claim of unfair competition can be sustained, if at all, only upon proof that Gamma employed the process of the patent in the manufacture of hydroxyquinoline prior to November 29, 1949, when the patent in suit was granted." (p. 44 herein)

The Court of Appeals in affirming this holding did not take into consideration that Gamma had obtained the information for its operations not from the patent but by ap-

propriating Petitioner's trade secrets. This decision is directly contrary to the decision by the Court of Appeals for the Second Circuit, by Judge Clark in December, 1953 in a case entitled *Franke et al.* v. *Wiltschek, et al.*, reported at 209 F. (2nd) 493, wherein the following statement was made.

> "Where defendants obtain secret information by means of a confidential relationship, they shall be held accountable for its use to their own advantage at the expense of the rightful possessor. See authorities collected below.
>
> Defendants argue that the heart of plaintiffs' process was revealed by an expired patent, and that the improvements thereon were unpatentable applications of mechanical skill. This totally misconceives the nature of plaintiffs' right. Plaintiffs do not assert, indeed cannot assert, a property right in their development such as would entitle them to exclusive enjoyment against the world. Theirs is not a patent, but a trade secret. The essence of their action is not infringement, but breach of faith. *It matters not that defendants could have gained their knowledge from a study of the expired patent and plaintiffs' publicly marketed product. The fact is that they did not.* Instead they gained it from plaintiffs via their confidential relationship, and in so doing incurred a duty not to use it to plaintiffs' detriment. This duty they have breached" (citing cases). (Italics ours)

The *Franke, et al.* v. *Wiltschek, et al.* case apparently has not been reviewed by the Supreme Court.

The decision in the present case is, of course, directly contrary to the decision in the *Second Circuit* case, which held that even though there was a patent and the Defendant could have obtained the information from the patent, the fact that it did not do so made the Defendants' actions a violation of Plaintiffs' trade secrets. Not only is the decision in the present case contrary to this case but it is also believed to be contrary to decisions rendered by this Court.

In the case of *Lincoln Gas Co.* v. *Lincoln*, 250 U. S. 256, 264, this Court stated as follows:

> "* * * even without diversity of citizenship (and there was none), if the bill presented a substantial controversy under the Constitution of the United States, and the requisite amount was involved, the jurisdiction extended to the determination of all questions, including questions of state law, and irrespective of the disposition made of the federal questions. Greene v. Louisville and Interurban R. R. Co., 244 U. S. 499, 508."

In a somewhat earlier case, that of *Siler* v. *L. & N. Railroad Co.*, 213 U. S. 175, 191, this Court made the following statement:

> "The federal questions as to the invalidity of the state statute because, as alleged, it was in violation of the Federal Constitution gave the Circuit Court jurisdiction, and, having properly obtained it, that court had the right to decide all the questions in the case, even though it decided the Federal questions adversely to the party raising them, or even if it omitted to decide them at all, but decided the case on local or state questions only."

This Court, in a later case, that of *Hurn* v. *Oursler*, 289 U. S. 238, 245, commented on the *Lincoln* and *Siler* cases and broadened the coverage thereof to include matters of the kind involved in the present case. This Court stated that—

> "The Siler and like cases announce the rule broadly without qualification, and we perceive no sufficient reason for the exception suggested. It is stated in these decisions as a rule of general application, and we hold it to be such—as controlling in patent, trademark, and copyright cases as it was in the cases where it was announced."

These decisions of this Court indicate quite clearly that the decision by the Court of Appeals in the present case

was directly contrary to the principles announced by this Court and followed in the Second Circuit. Under the present facts where the two stages of Petitioner's operation are necessary for the production of hydroxy-quinoline, all of the details of the processes must be considered as "related" to each other and to the claim of patent infringement and that the Court has jurisdiction even though there is no diversity of citizenship.

Infringement of Patent in Suit

The Court of Appeals herein limited the claims of the patent far beyond the actual wording thereof and beyond the actual wording of the specification. The Court also failed to give Petitioner the benefit of well-known equivalents which were used by Respondent, Gamma. This holding is directly contrary to similar cases in other jurisdictions, notably in the Courts of Appeals of the Second, Fourth and Ninth Circuits.

Question 6 propounded by Petitioner is directed to Petitioner's charge of patent infringement.

The District Court in interpreting the claims of the patent in suit made the following erroneous statement, which appears to be the basis of the Court's decision that no infringement took place.

> "The only improvement, however, appears to be in the allegedly NOVEL CONCEPT OF MAINTAINING THE TEMPERATURE OF REACTION within the limits of 250° C. to 290° C." (Italics Court's.) (p. 33 herein)

The Court emphasized that Petitioner's concept was *maintaining* the temperature of the reaction between 250° and 290° C. Such is not at all the case as there is nothing in the patent to indicate that Petitioner intended that the temperature during the reaction should never go above 290° C. The sodium hydroxide is heated to this temperature *before* the reaction begins. Then heating is discontinued, the

quinoline sulfonic acid is introduced and the reaction takes place with the liberation of heat and thus the temperature *must* rise above the initial temperature.

The claims of the patent are so worded that they definitely do not say that the temperatures must be maintained throughout the reaction. For instance, claim 11 recites the heating of the sodium hydroxide which the record shows contains about .5% of water to the temperature range of 250° to 290° C. This is done before the quinoline sulfonic acid is added thereto as the claim recites as the next element of the process the introduction of this compound. The claim does not state that the reaction temperature remains within the initial range but it recites that the reactants are maintained in the semi-solid state. In other words, the reaction, although there is a rise in temperature, takes place without melting of the solid constituents, which would take place only if the temperature reached 320° C., whereas in the Gamma process it reaches only 315° C. The presence of the water which is added and which is formed in the reaction gives a semi-solid character to the reaction mass.

The Court in his decision in effect admitted that the sodium sulphate used by Respondent, Gamma, acts to reduce the temperature.

> "The sodium sulphate functions solely as a *Temperature Moderator* which absorbs the heat generated by the exothermic reaction; it does not, however, decrease the temperature of the reaction." (Italics Court's.) (p. 39 herein)

The sodium sulphate absorbs the heat created by the exothermic reaction and the extent of such absorption is equivalent to starting the operation at a temperature about 30° lower than used by Gamma, which would place the starting temperature within Petitioner's stated range, as amply testified to by Petitioner's witnesses, Barsky and Grier.

It appears that the District Court realized that Respondent, Gamma, has utilized the process of Petitioner as set forth in the patent and the Court made the following statement:

> "The teachings of the patent in suit are, in fact, violated in the practice of the accused process." (p. 41 herein)

We can now see the position of the District Court in stating that while the teachings of the patent are violated by Gamma, he construed the claims so narrowly that he held that there was no infringement, the basis being that Petitioner's claims required that the temperature of the reaction *never rise above 290° C.* As we have explained above, the claims are *not so limited* and therefore the basis of the District Court's decision is erroneous.

The law on the subject in other circuits is quite clear that where a Defendant uses all of the features of a claim of a patent in suit, with the exception of one, and as to that one uses a known equivalent, infringement of such a claim exists. In other words, a Defendant in an infringement suit cannot escape by keeping his process as to one element of the claim outside of the specific language thereof where he has used the inventive idea of the claim or the equivalent thereof. In such case he obtains the same result as the claim by using a known variation.

In the Court of Appeals for the Ninth Circuit (certiorari not requested), in the case of *Cutter Laboratories* v. *Lyophile Cryochem Corp.*, 179 F. (2nd) 80, a chemical process was involved and the situation is particularly in point here since the question of infringement involved a question of temperatures. The Plaintiff used a temperature of —70° C. or lower in order to obtain substantially instantaneous freezing. The Defendant did not use such low temperatures but those in the neighborhood of —20° C., thereby obtaining a substantially slower rate of freezing. A similar situation is present in this case where the claims

of the patent in suit recite a temperature lower than that assertedly used by Gamma, but the essence of Petitioner's invention has been appropriated and the results are the same. The Court of Appeals for the Ninth Circuit said:

> "Appellant did not automatically escape infringement by keeping his process outside the literal language of the claims. * * * Appellant has merely replaced substantially instantaneous freezing with slower methods of freezing well known in the prior art. There is nothing to show that appellant achieves any substantially different or improved result by the slower method as compared with the results achieved by the Reichel process. Appellant has used all the inventive elements of the claims, and, in place of another element, quick freezing, used a substitute well known at the time of the invention, slower freezing. Cf. Pedersen v. Dundan, 9 Circ., 220 F. 309; Cazier v. Mackie-Lovejoy Mfg. Co., 7 Circ., 138 F. 654. It has long been established that such a substitution does not avoid infringement. Gill v. Wells, 22 Wall 1, 89 U. S. 1, 15, 28-32, 22 L. Ed. 699."

Said Court elaborated further on the principles involved and then considered the case of a claim which could not possibly be construed to cover what the infringer did. Nevertheless the Court held that the invention was appropriated by the Defendant and stated as follows:

> "* * * 'But often even with the most sympathetic interpretation the claim cannot be made to cover an infringement which in fact steals the very heart of the invention; no matter how auspiciously construed, the language forbids. It is then that the doctrine of equivalents intervenes to disregard the theory that the claim measures the monopoly and ignores the claim in order to protect the real invention. Claude Neon Lights v. Machlett & Son, 2 Circ., 36 F. (2nd) 574; see also, Otis Elevator Co. v. Atlantic Elevator Co., 2 Circ., 47 F. (2nd) 545, 547; Oates v. Camp, 4 Circ., 82 F. (2nd) 11, 116.' Keith v. Charles E. Hires Co., 2 Cir., 116 F. (2nd) 46, 48.

> In the present case the jury was instructed that 'infringement is to be found when the accused accomplishes substantially the same result by substantially the same means as does the patented invention.' Under the circumstances the verdict of infringement was not unreasonable."

In the present case, as in the above citation, Respondent, Gamma, has used all of the elements of Plaintiff's claims but has varied one of the elements, namely, that relating to temperature. Gamma has *apparently* used a higher temperature but has in effect reduced that temperature by a well-known expedient, namely, the use of an inert cold diluent, so that the final effect is to place the temperature of the sodium hydroxide within the range of the patent in suit.

Another recent case in the Court of Appeals for the Second Circuit has a direct bearing on the subject. In *Musher* v. *Alba Trading Co.*, 150 F. (2d) 885, decided in 1945 by Hon. Learned Hand, (Certiorari denied at 326 U.S. 770) the following statement is made:

> "Claim One selects, as the combination, 'a slightly elevated temperature' and 'a short time'; the defendant departs from this by using no heat but allowing the infusion to go on for three days at least. When dealing with such a claim, it would certainly be wrong to divorce heat and time into two separate elements; and to hold that, because defendant left out heat, but greatly lengthened time, it omitted one of the constituents of the claims. The combination of the two correlatives constitutes a single element; and although the defendant has not adopted the combination specified in the claim, it seems to us that the combination which it substitutes is the equivalent. There was absolutely no prior art; for the passing references in the testimony to earlier processes, on which the defendant relies, were totally inadequate under well settled law; moreover, the invention has had a very considerable success. Of course, the fact that verbally the infringing process is not within the

> claim is no objection to the application of the doctrine of equivalents; indeed it creates the very occasion which should evoke it. Sanitary Refrigerator Co. vs. Winters, 280 U. S. 30, 41, 50 S. Ct. 9, 75 L. Ed. 147; Claude Neon Lights vs. E. Matchett & Son, 2 Cir., 36 F. (2nd) 574, 575; Black and Decker Manufacturing Co. vs. Baltimore Truck Tire Service Corporation, 4 Circ., 40 F. (2) 910, 914."

This case clearly sets forth the principles applicable to the present case, which involves a question of temperature wherein Gamma apparently departed from the limitation of the claim. In the *Musher* v. *Alba* case, the claim asserted that the temperature should be elevated but the Defendant did not raise the temperature at all. It used the equivalent, namely, a long period of time. The use of long time of reaction was a well-known equivalent to higher temperatures in such a reaction as was involved in that suit. The doctrine of equivalents was invoked by the Court which stated that it was just this kind of a situation, where the infringing process does not come strictly within the claim but uses the invention, which calls for invoking this doctrine.

In the Court of Appeals for the Fourth Circuit, there was the case of *Oates* v. *Camp,* 83 F. (2nd) 111, 115. While the question involved only a narrow patent, the range of equivalents of Plaintiff's claims were given to him by the Court, which stated that—

> "Whether complainant's invention be termed a pioneer or not, it unquestionably solved a problem for the solution of which others had sought in vain * * *. In such case, the law is well settled that he is entitled to a liberal construction of his claims and a liberal application of the doctrine of equivalents, to the end that he may not be deprived of the fruits of what he has done. *Eibel Process Co.* v. *Minnesota and Ontario Paper Co.*, 261 U. S. 45, 63, 43 S. Ct. 322, 67 L. Ed. 523; *Wine Ry. Appliance Co.* v. *B. & O. R. Co.* (C. C. A. 4th) 78 F. (2nd) 312, 317; *Black & Decker Mfg. Co.* v. *Baltimore Truck Tire Service Corp.* (C. C. A. 4th) 40 F. (2nd) 910; *Gulf*

Smokeless Coal Co. v. *Sutton Steele & Steele* (C. C. A. 4th) 35 F. (2nd) 433; *Frick Co.* v. *Lindsay* (C. C. A. 4th) 27 F. (2nd) 59, 62."

* * * * *

Certainly one who thus takes the heart of an invention cannot escape liability for infringement by such slight changes in form and such use of obvious equivalents." (Citing Mr. Justice Curtis in *Winans* v. *Denmead,* 15 How. 330, 342, 14 L. Ed. 717.)

The statement of Mr. Justice CURTIS applies clearly to the situation in the present case where obvious equivalents were used by Respondent, Gamma in obtaining Petitioner's result and in using the heart of Petitioner's invention, as clearly admitted by the District Court in stating that the "teachings of the patent in suit are, in fact, violated" by Gamma.

The decision in the present case is directly contrary to the long established practice of the Supreme Court. There was the case of *Wicke* v. *Ostrum,* 103 U. S. 461, 469, in 1880, wherein this Court stated that—

"He (the inventor) was entitled also to the benefit of all the mechanical equivalents of his several elements, known at the time of his invention, if used in the same combination."

The same principle was enunciated by this Court in the case of *Eibel Process Co.* v. *Minnesota & Ontario Paper Co.,* 261 U. S. 45, 63, wherein it stated:

"In administering the patent law the court first looks into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substanially. If it has done so, then the court is liberal in its construction of the patent to secure to the inventor the reward he deserves."

In the still more recent case, that of *Sanitary Refrigerator Co.* v. *Winters et al.*, 280 U. S. 30, 41-42, the same principle was reiterated:

> "There is a substanial identity, constituting infringement, where a device is a copy of the thing described by the patentee 'either without variation or with such variations as are consistent with its being in substance the same thing.' *Burr* v. *Duryee*, 1 Wall, 531, 573. Except where form is of the essence of the invention, it has little weight in the decision of such an issue: and, generally speaking, one device is an infringement of another 'if it performs substantially the same function in substantially the same way, and accomplish substantially the same result, they are the same, though they differ in name, form, or shape.' *Machine Co.* v. *Murphy*, 97 U. S. 120, 125. * * * A close copy which seeks to use the substance of the invention, and, although showing some change in form and position, uses substantially the same devices, performing precisely the same offices with no change in principle, constitutes an infringement. *Ives* v. *Hamilton*, 92 U. S. 426, 430."

It is quite clear that this Court and certain Courts of Appeals, consistently hold that it is elementary that the language of the claims of a patent should be construed in the light of the specification. In the present case, the Court of Appeals for the Third Circuit did not follow this principle but denied Petitioner the benefit of the description in the specification and denied Petitioner the benefit of equivalents even though there was the admission that the teachings of the patent has been violated.

Conclusion

Petitioner prays that the Supreme Court grant this Petition for Writ of Certiorari in order that the Court of Appeals for the Third Circuit, and other Courts of Appeals which may be influenced by or follow the decision in the instant case, may properly apply the principles involved herein, namely:

1. That under 28 U. S. C. A. 1338 (b), a "related claim" for unfair competition under the patent laws is one which includes all steps of an operation and all equipment therefor which are used to obtain the product of the patent in suit.

2. That even though a patent has issued from which the Respondent might have obtained all of the information necessary for operating its process, the fact that said Respondent appropriated Petitioner's trade secrets renders Respondent guilty of violation of said secrets.

3. That infringement of a patent claim is not avoided where Respondent substitutes for a limitation of said claim, a well-known equivalent element.

Respectfully submitted,

H. C. Bierman
Attorney for Petitioner
19 West 44th Street
New York 36, N. Y.

New York, N. Y.
March 10, 1955.

[Opinions Follow]

Opinion of the United States Court of Appeals for the Third Circuit

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 11,377

DARSYN LABORATORIES, INC.,

Appellant

v.

LENOX LABORATORIES, INC., GAMMA CHEMICAL CORP., IRVING BIBER, BENJAMIN PECHERER, JOHN ROBSON, J. ROBERT FISHER, LOUIS L. ZEMPLINER AND WILLIAM GERLACH.

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY

Argued December 9, 1954

Before MARIS, MCLAUGHLIN and KALODNER, *Circuit Judges*

OPINION OF THE COURT

(Filed December 23, 1954)

PER CURIAM:

This is an appeal by the plaintiff from a judgment of the district court dismissing its complaint in a suit involving alleged patent infringement and unfair competition in using the plaintiff's trade secrets. The issues in the case are thoroughly discussed and correctly decided in the opinion filed by Judge Smith, 120 F. Supp. 42, to which we need add nothing. For the reasons therein set out the judgment of the district court will be affirmed.

A true Copy:
Teste:

Clerk of the United States Court of Appeals for the Third Circuit.

Opinion of Smith, District Judge

This is a civil action under the patent laws, and the jurisdiction of the Court is founded solely on Section 1338 of Title 28 U.S.C., 28 U.S.C.A. 1338. The complaint is in one count but states two separate and distinct claims: first, a claim against the defendants Gamma Chemical Corporation, hereinafter indentified as "Gamma," John Robson, and J. Robert Fisher, for the infringement of a patent of which the plaintiff is admittedly the owner; and second, a claim against all of the defendants for the misappropriation of certain trade secrets and unfair competition. These claims are predicated upon separate and distinct causes of action and must, therefore, be separately considered.

Relationship of the Parties

The plaintiff, a corporation of New Jersey, was organized March of 1946, and thereafter was engaged in the manufacture of hydroxyquinoline. The defendant Biber was an officer of this corporation until December 2, 1946, when he resigned after selling his stock to the Metalsalts Corporation. Thereafter the defendant Biber organized the Lenox Laboratories, a corporation of New Jersey, which was engaged in the manufacture of hydroxyquinoline until October 17, 1949, or shortly thereafter, when, pursuant to an agreement, it sold its assets, including machinery, equipment and processes, to the defendants Robson, Fisher and Mempliner, who thereafter assigned and transferred these assets to Gamma, a corporation of New Jersey.

Claim for Infringement

The patent in suit pertains generally to the manufacture of 8-hydroxyquinoline, hereinafter identified as "hydroxyquinoline," and relates particularly to the alkali hydrolysis of quinoline-8-sulfonic acid, or its alkali metal salt, from

which the hydroxyquinoline is synthesized and isolated. The claims of the patent in suit, construed in the light of the specifications, relate to an improvement on the earlier process of ALKALI HYDROLOSIS, which was concededly old, and are limited to the successive steps therein defined.

The raw material from which hydroxyquinoline is ultimately synthesized is quinoline, a coal tar derivative, synthesized and isolated by the Skraup process, commonly called Skraup's synthesis. Quinoline is a benzo-pyridine, a heterocyclic base, having two dissimilar rings—the benzene and pyridine nuclei—with two ortho-carbon atoms common to both. The hydrogen atoms occupy dissimilar positions relative to the nitrogen atom, and consequently seven mono-substitution products and twenty-one di-substitution products, one of which is hydroxyquinoline, are possible for similar substituents. The quinoline compounds have their substituents in the benzene nucleus.

The quinolines possess known chemical properties common to the aromatic hydrocarbons. These properties are ascribable primarily to the presence of the benzene nucleus. The quinolines, like the aromatic hydrocarbons, yield a sulfonic acid upon sulfonation, to wit, the treatment of the quinoline with oleum (sulphuric acid containing approximately 20% of sulphur trioxide, SO_3, in solution) at a temperature within the range of 90°C. to 160°C.; an increase in temperature, but within the range, is known to expedite the reaction. The quinoline-8-sulfonic acid thus produced, like the sulfonic acids of the aromatic hydrocarbons, yields the sodium salt upon alkali hydrolysis, to wit, fusion of the sulfonic acid with caustic soda at fusion temperature. These known chemical properties are utilized not only in the manufacture of hydroxyquinoline but also in the manufacture of many derivatives of the aromatic hydrocarbons.

The sulfonation process is one of known utility in the chemical industry, particularly in the synthesis, isolation

and manufacture of the derivatives of the aromatic hydrocarbons. It is employed in the manufacture of quinoline-8-sulfonic acid, the raw material from which the sodium salt of hydroxyquinoline is synthesized. It is also employed in the manufacture of sulfonic acids of benzene and napthalene, the raw materials from which their compounds are synthesized. See "Unit Processes in Organic Synthesis," pages 209 to 271, inclusive, published in the 1935 and 1938, "Sulfonation," by Grogins and Simpson. The sulfonation of the aromatic hydrocarbons and the aromatic amines is a separate and distinct process, and is so regarded in the chemical industry. It is generally employed in the manufacture of the intermediate products from which the many derivatives of the aromatic hydrocarbons are synthesized. *Ibid.*

The claims of the patent in suit are expressly limited to the alkali hydrolysis of quinoline-8-sulfonic acid and its alkali metal salts; in fact, there is no reference in the patent to the sulfonation process. The patentees apparently regarded sulfonation and hydrolysis as separate and distinct processes. The plaintiff here claims an improved process for the sulfonation of quinoline as a trade secret, and an improved process for the hydrolysis of quinoline-8-sulfonic acid as a patentable invention. We purposely refrain from any discussion of the sulfonation process for reasons which are hereinafter discussed.

Prior Art

It was common knowledge long prior to the present invention that quinoline-8-sulfonic acid, or its alkali metal salt, could be converted into the sodium salt of 8-hydroxyquinoline by alkali hydrolysis, to wit, the fusion of quinoline-8-sulfonic acid with caustic soda or potash. This was disclosed by Fischer in a patent (No. 270,045), issued in 1883, and in two earlier articles to which reference is hereinafter made. It was also common knowledge that the

process was of particular utility in the hydrolysis of the sulfonic acids of the aromatic hydrocarbons. See "Unit Processes in Organic Synthesis," pages 537 to 574, inclusive, published in 1935 and 1938, "Hydrolysis," by Lloyd.

The process of the Fischer patent is therein described as follows: "In carrying out my invention ONE PART, by weight, quinoline-sulfonic acid is carefully heated in an iron-melting-pan on an open fire with from one to TWO PARTS, by weight, of caustic soda or two or three parts, by weight, of caustic potash. The heating is continued until a sample of the MOLTEN MASS on being neutralized with hydrochloric acid no longer gives a separation of unchanged quinolinesulfonic acid. When this point has been reached the molten mass is DISSOLVED IN WATER AND COMPLETELY NEUTRALIZED BY HYDROCHLORIC ACID. The oxyquinoline is then distilled off by a strong current of steam." (Emphasis by the Court.) It is conceded that the MOLTEN MASS is maintained at a temperature above 310°C. during the reaction.

The process was discussed in two articles (D-G8), published by Bedall and Fischer on March 3 and June 16, 1881. The process defined in the cited patent is more fully explained in the later article, from which we quote: Concerning the production of hydroxyquinoline the following is to be additionally observed. The quinolinesulfonic acid in powder is, by gradual addition to a TWO or three fold volume of caustic soda to which a one-quarter part of its weight of water was added, carefully brought to melting point over an open flame, with frequent stirring. After some time the mass (becomes) greenish yellow, and later the smell of quinoline appears. At this moment the MELTING MUST BE INTERRUPTED, as otherwise (considerably more) decomposition takes place. To isolate the formed hydroxyquinoline, the MOLTEN MASS is dissolved in hydrochloric acid, and the weak acid solution is at once mixed with sodium carbonate and then a strong steam jet is admitted. The hydroxyquinoline is thereby easily volatilized

with the steam and condenses in the receiver into beautiful colorless needles." (Emphasis by the Court.)

It will be observed that in the specific process described in the cited patent the hydroxyquinoline is isolated and recovered by the following method: When the reaction is complete the molten mass, which is still at reaction temperature, is dissolved in water to which there is added only sufficient acid, either hydrochloric or sulphuric, to neutralize the solution; the neutralization of the solution isolates the hydroxyquinoline from the sodium salt, the reaction product, and is recovered by distillation. This conclusion is supported not only by the specifications of the cited patent, but also by the article of March 3, 1881, supra.

The articles of June 16, 1881 discloses a modified method which may be employed to isolate and recover the hydroxyquinoline. This method comprises the following successive steps: first, the molten mass, which is still at reaction temperature, is dissolved in water to which there is added sufficient acid, either hydrochloric or sulphuric, to insure complete solution of the sodium salt of the hydroxyquinoline, the reaction product; second, the weak acid solution is neutralized by the addition of sodium carbonate, and the hydroxyquinoline is thus isolated from the sodium salt; and third, the hydroxyquinoline is recovered by distillation.

The successive and concomitant steps of the Fischer process, as described in the articles, may be summarized as follows: (a) The fusion kettle is charged with predetermined quantities of sodium hydroxide and quinoline-8-sulfonic acid, preferably two parts of the former to one of the latter; the quinoline-8-sulfonic acid is introduced gradually as the charge is stirred or agitated. (b) Concomitant with the introduction of the quinoline-8-sulfonic acid mixture is carefully heated until it is a molten mass, approximately 315° C. to 327° C., the reaction temperature; the application of external heat is discontinued when the molten mass gives evidence of decomposition. (c) When

the reaction is complete the molten mass is dissolved in a quantity of water to which there is added sufficient acid, either hydrochloric or sulphuric, to insure solution. (d) The weak acid solution of the sodium salt of hydroxyquinoline is then neutralized by the addition of sodium carbonate and the hydroxyquinoline is thus isolated. (f) The hydroxyquinoline is recovered by distillation.

It should be noted that the Fischer patent does not recommend the ADDITION of water; there is approximately one-half of one per cent of water present in the sodium hydroxide. The article of June 16, 1881, recommends the ADDITION of water. The addition of water would, therefore, seem to be optional, according to the teachings of Fischer. It was known prior to the patent in suit that the alkali hydrolysis of the sulfonic acids could be effected at high temperature "with little or no water." See "Unit Processes in Organic Synthesis," supra, "Hydrolysis," supra.

A process for the synthesis and isolation of phenol from benzenesulfonic acid, or its alkali metal salt, is disclosed in an article entitled "Hydrolysis," by Stewart J. Lloyd, which appears in "Unit Processes in Organic Synthesis," published in 1938. The process therein described is directed particularly to the synthesis by alkali hydrolysis of sodium phenolate, the reaction product from which the phenol is isolated and recovered.

The teachings of this reference are particularly pertinent and may be summarized as follows: The sodium phenolate, the reaction product from which the phenol is isolated and recovered, is produced by the fusion of sodium benzenesulfonate and caustic soda to which there is added approximately 2%, by weight, of water; the benzenesulfonate, as the name indicates, is a product of the sulfonation process. The fusion kettle is charged with a predetermined quantity of caustic soda, which is then heated to reaction temperature, 300° to 320° C., "at which time the

solution of benzenesulfonate is pumped, in a regulated manner, under the surface of the caustic melt." When the reaction is complete the molten mass is quenched in a "measured quantity of sodium phenolate wash waters from previous charges." The phenol is released and isolated from the aqueous suspension of sodium phenolate upon neutralization in the manner described in the article. It should be noted that in this process a SMALL QUANTITY OF WATER is added to the caustic soda, a common practice in alkali hydrolysis.

We perceive in the successive steps of the fusion process of Lloyd a rather obvious modification and adaptation of the successive steps of the fusion process of Fischer herein above described. It will be observed, however, that in the Lloyd process the CAUSTIC SODA IS HEATED TO THE REACTION TEMPERATURE before the sodium benzenesulfonate is introduced. However, in both processes the MOLTEN MASS is maintained at reaction temperature until the reaction is complete. The reaction temperature in both processes, Lloyd and Fischer, is above the fusion point.

There is disclosed in the same article a process for the synthesis and isolation of naphthol from naphthalenesulfonic acid. The successive steps of the process are the same as those hereinabove described. The sodium naphtholate is produced by the fusion of caustic soda and sodium naphthalenesulfonate at a temperature of approximately 300° C. When the reaction is complete the molten mass is dissolved in the "weak washings" from the previous crude washings. "The resulting HOT SOLUTION is filtered through iron filter presses, the filtrate going into the acidification tanks, * * *." (Emphasis by the Court.) The naphthol is isolated by the acidification of the filtrate, which, during this step of the process, is maintained at a temperature of 93° C. It should be noted that in this process a substantial quantity of water is present in the sodium naphthalenesulfonate.

The relevancy of the disclosures of the cited reference, "Hydrolysis," supra, should be apparent to the persons

skilled in the art to which the patent in suit pertains, to wit, the alkali hydrolysis of the sulfonic acids and their alkali metal salts. Benzene, naphthalene and quinoline are known to possess chemical properties common to the aromatic hydrocarbons; these properties in quinoline are ascribable to the benezene nucleus in which the quinoline compounds have their substituents. Their chemical reactions upon alkali hydrolysis are known and predictable. The cited reference clearly indicates that the Fischer process, modified and adapted to commercial production, may be employed in the manufacture of phenol and naphthol, which, like hydroxyquinoline, are the ultimate products of alkali hydrolysis.

It should be observed that in each of the processes hereinabove described the temperature is maintained at 300° C. or more during the reaction, and the reaction occurs while the constituents are in a MOLTEN STATE. It is conceded that this was the recognized practice in the industry prior to the patent in suit.

File Wrapper

The patent in suit contains fourteen claims, each of which is the amended counterpart of a claim contained in the original application. The original claims were rejected "as lacking invention over each of the references cited," to wit, the patent to Fischer, and the articles by Bedall and Fischer, supra. The claims were then amended to overcome the objection interposed by the examiner.

We direct our attention to Claim 9 of the original application. The invention is therein defined as follows: "A method of making 8-hydroxyquinoline which comprises providing divided sodium hydroxide, adding thereto less than 4% of water, heating said mixture to a temperature of at least 250° C., introducing quinoline-8-sulfonic acid or its alkali or alkaline earth metal salts into said mixture, and

agitating the same, maintaining the reaction temperature for from 5 to 30 minutes, whereby the sodium salt of 8-hydroxy quinoline is formed." The other claims, although not identical, were similar.

The patentees, in response to the rejection and in support of their claims, filed a reply in which they stated:

"The U. S. patent to Fischer, which the Examiner has cited, shows a reaction in which NO WATER is present and the composition is heated so that it becomes a molten mass.

"Applicants' operating conditions are quite different. First, there is NO FUSION OF THE MASS; second, the caustic soda is finely divided, and third, there is present a very small amount of water which is a small fraction of that present in the prior process but is quite necessary to applicants' (sic.) operation.

"Applicants' claims are directed to these three features and also to the TEMPERTURES USED, which are below the fusion point of caustic soda, the temperatures ranging between 250° C. and 290° C. ALL THE CONDITIONS as set forth in the claims ARE NECESSARY in order to obtain the successful result which applicants' process affords." (Emphasis by the Court.)

There was filed in the proceedings an affidavit by Nathaniel Grier, one of the patentees. He stated therein: "Further, Fischer in the patent cited states 'the *heating* is *continued* until a sample of the *molten mass* on being neutralized with hydrochloric acid no longer gives a separation of quinoline-8-sulfonic acid.' (Italics ours.) Experimental evidence indicates that for the fulfillment of these conditions outlined by Fischer temperatures of at least 320° C. are needed. APPLICANTS HAVE SET 290° C. AS THE UPPER LIMIT FOR THE REACTION, and under the stated conditions the COMPLETE REACTION MIXTURE DOES NOT MELT. The final reaction mixture

within the temperature limits set by us is in the form of a DRY POWDERY MASS. It is not a melt in any sense. The reaction product is unsintered. No melting can take place at 290° C. or lower. THIS IS OF FUNDAMENTAL IMPORTANCE and greatly affects the yield of 8-hydroxyquinoline. It is detrimental to the yield to cause a melting of the complete reaction mixture especially towards the end of the reaction. The small amount of water added and THAT WHICH RESULTS AS THE CONVERSION PROGRESSES serve as a temporary medium for the reaction to occur at the temperature used by the applicants." (Emphasis by the Court.)

Patent in Suit

The plaintiff here relies on claims 1, 2, 9, 11 and 14. Claims 9 and 14 are typical. The former defines the invention as follows: "A method which comprises providing divided sodium hydroxide, adding thereto 0.5 to 4% of water, heating said mixture to a temperature of 250° C. to 290° C., introducing a compound taken from the group consisting of quinoline-8-sulfonic acid and its alkali and alkaline earth metal salts into said mixture, the ratio of sodium hydroxide to said sulfonic acid being 1.2-2 to 1, and agitating the same, maintaining the reaction temperature for from 5 to 30 minutes, whereby the sodium salt of 8-hydroxyquinoline is formed." The latter includes an additional step, to wit, "dissolving the reaction product WHILE AT REACTION TEMPERATURE in water, whereby said sodium salt is freed from the excess of sodium hydroxide." (Emphasis by the Court.) These claims must be narrowly construed for the reasons hereinafter discussed.

The specification of the patent in suit states that the object "of the present invention is to provide a process wherein the REACTION TAKES PLACE IN THE SEMI-SOLID PHASE WITHOUT FUSION OF THE CONSTITUENTS." The specification further states: "The

temperatures used range from 250° C. up to about 290° C. The reaction starts slowly at about 250° C. and reaches a MAXIUM at about 290° C. If lower temperatures are used, the reaction is so slow as to practically not take place, WHILE IF THE TEMPERATURE IS RAISED TO SUBSTANTIALLY ABOVE 290° C., the yield * * * is reduced to a substantial extent depending on the temperature used." (Emphasis by the Court.) This explanation is consistent with the explanation contained in the affidavit, *supra*. We must, therefore, presume that the temperature limits are critical in the practice of the invention.

It is urged by the plaintiff, as it was in the prosecution of the patent application, that the invention is a specific improvement on the invention covered by the patent to Fischer, *supra*. The only improvement, however, appears to be in the allegedly NOVEL CONCEPT OF MAINTAINING THE TEMPERATURE OF REACTION within the limits of 250° C. to 290° C. The proportion of sodium hydroxide to quinoline-8-sulfonic acid is clearly within the range prescribed by Fischer not only in his patent but also in the early articles. The final step described in claim 14, to wit, "dissolving the reaction product while at reaction temperature in water" is likewise disclosed by Fischer. This step is disclosed also by Lloyd in his article entitled "Hydrolysis," *supra*.

When the claims in suit are construed in the light of the prior art and the specifications of the patent, as they must be, it is evident that the essence of the invention lies primarily, if not solely, in the NOVEL CONCEPT OF MAINTAINING THE REACTION TEMPERATURE WITHIN THE DEFINED LIMITS, which are concededly below the fusion point of the constituents. This feature was urged as pivotal in the prosecution of the patent application and in support of the claim to patentable invention; in fact, the patentees stated in unequivocal language that this concept distinguished their process from the earlier process of Fischer.

There is an additional factor which must be taken into consideration in our construction of the claims in suit. The file wrapper reveals that the patentees acquiesced in the rejection of the original claims, and, in response to the objections of the examiner, incorporated a specific temperature range, *supra,* in each of the fourteen claims. It is well established that where "an applicant for a patent acquiesces in the rejection of claims, and amends the claims * * * to meet the objections of the Patent Office, he will be deemed to have surrendered and disclaimed what he thus conceded and is bound by the limitations imposed, and it is immaterial whether the rejection was right or wrong." *Texas Co.* v. *Anderson-Prichard Refining Corporation,* 122 F. 2d 829, 842; *I. T. S. Co.* v. *Essex Co.,* 272 U. S. 429, 443; *Schriber Co.* v. *Cleveland Trust Co.,* 311 U. S. 211, 220, *et seq; Exhibit Supply Co.* v. *Ace Corp.,* 315 U. S. 126, 136. This rule is applicable where, as here, the claims in suit cover the successive and concomitant steps of an improved process which is distinguishable from the process of the prior art only in the limitations adopted and incorporated in the claims.

It should be emphasized that the claims of the patent in suit cover and are expressly limited to a process for the manufacture of the sodium salt of 8-hydroxyquinoline, from which the hydroxyquinoline is isolated and recovered. The sodium salt, formed by the reaction, is dissolved in water when the reaction is complete; the hydroxyquinoline is isolated upon neutralization of the solution and is thereafter recovered by distillation.

The specifications of the patent disclose alternative expedients for the isolation and recovery of the hydroxyquinoline, but these expedients are not claimed as elements of the invention. These expedients are obvious modifications of the method disclosed by Fischer and Bedall, *supra.* It must therefore be presumed that these expedients were either old—and the specifications of the patent would indicate that they were—or abandoned.

The claims of the patent as issued are the measure of the grant and the patentee's monopoly. "Nothing is better settled in the law of patents than that the patentee may claim the whole or only a part of his invention, and that if he only describe and claim a part, he is presumed to have abandoned the residue to the public. The object of the patent law in requiring the patentee to 'particularly point out and distinctly claim the part, improvement or combination which he claims as his invention or discovery,' is not only to secure to him all to which he is entitled, but to apprise the public of what is still open to them. The claim is the measure of his right to relief, and while the specification may be referred to to limit the claim, it can never be made available to expand it." *McClain* v. *Ortmayer*, 141 U.S. 419, 423, 424. See also *Miller* v. *Brass Co.*, 104 U.S. 350, 352; *Royal Co.* v. *Tweedie*, 276 Fed. 351, 355; *Rip Van Winkle Wall Bed Co.* v. *Murphy Wall Bed Co.*, 1 F. 2d 673, 679; *Ely Norris Safe Co.* v. *Mosler Safe Co.*, 62 F. 2d. 524, 526. The doctrine is clearly applicable here.

The successive and concomitant steps of the patented process may be summarized and described as follows: (a) The fusion kettle is charged with a predetermined quantity of caustic soda, 335 parts, by weight, to which there is added 8.4 parts, by weight, of water; the mixture is heated to a temperature of 270° C., which is within the critical range defined by each of the claims in suit. (b) Thereafter a predetermined quantity of quinoline-8-sulfonic acid, 210 parts, by weight, is introduced into the fusion kettle while the constituents are stirred or agitated; the "semi-solid" mixture is stirred or agitated until the reaction is complete, approximately 5 to 30 minutes. (c) When the reaction is complete the "semi-solid" mixture, while still hot, is dissolved in a quantity of water to which there is added a sufficient quantity of sulphuric acid to insure solution. (d) The solution is neutralized by the addition of sodium hydroxide. (e) The hydroxyquinoline, which is isolated

from the sodium salt of hydroxyquinoline upon neutralization of the solution, may be recovered by distillation. The reaction temperature is maintained within the range defined by the claims, to wit, 250° C. to 290° C.

This summary follows substantially the example described in the specification of the patent. It should be observed, however, that only steps (a), (b), and (c) are defined in the claims in suit; steps (d) and (e), although disclosed in the specification, are not claimed as elements of the invention. The specification would indicate that expedients (d) and (e) were well known; the specification states that the reaction product, the sodium salt of hydroxyquinoline, "may be treated in any well known manner to recover the pure 8-hydroxyquinoline." We might add that in the practice of the Fischer process the hydroxyquinoline may be isolated and recovered from the sodium salt of hydroxyquinoline in substantially the same manner.

Infringment

The issue of infringement here turns on the construction to be given the claims in suit, which are limited, as we have heretofore construed them, to a specific combination of successive and concomitant steps. The charge of infringement can be sustained only upon proof that the accused process embraces, in similar combination, the successive and concomitant steps of the patented process, and particularly those steps regarded as critical in the practice of the invention. *Royer* v. *Coupe*, 146 U.S. 524, 530, *et seq.*; *Universal Oil Products Co.* v. *Globe Oil & Refining Co.*, 137 F. 2d 3, 8, aff'd. 322 U.S. 471; *United States Glass Co.* v. *Atlas Glass Co.*, 90 Fed. 724; *Jansen-Salsbery Lab.* v. *O. M. Franklin Blackleg Serum Co.*, 72 F. 2d 15, 18, *et seq.*; *John Waldron Corporation* v. *Equitable Paper Bag Co.*, 106 F. 2d 724; *Haynes Stellite Co.* v. *Osage Metal Co.*, 110 F. 2d. 11; *Texas Co.* v. *Anderson-Prichard Refining Corporation*, 122 F. 2d 829, 841; *United States Rubber*

Co. v. *General Tire & Rubber Co.*, 128 F. 2d 104, 108, *et seq.* It is well settled that a substantial departure from the process of the patent negatives the charge of infringement. Ibid.

We are fully aware that the charge of infringement may not be avoided by the omission of an essential element of the invention, where such omission is coupled with the substitution of an equivalent element. This rule, however, must be limited in its application, where, as here, the patentee has narrowed his claim to escape the rejection of his application. *Weber Electric Co.* v. *Freeman Electric Co.*, 256 U.S. 668, 677; *I.T.S. Co.* v. *Essex Co., supra; Smith* v. *Magic City Club*, 282 U.S. 784, 790. Where "a patentee has narrowed his claim, in order to escape rejection, he may not 'by resort to the doctrine of equivalents, give to the claim the large scope which it might have had without the amendments which amount to disclaimer.'" *Smith* v. *Magic City Club, supra.*

The rule, which must be applied under such circumstances, is succinctly stated in *Smith* v. *Magic City Club, supra*, as follows: "The applicant having limited his claim by amendment and accepted a patent, brings himself within the rules that if the claim to a combination be restricted to specified elements, all must be regarded as material, and that limitations imposed by the inventor, ESPECIALLY SUCH AS WERE INTRODUCED INTO AN APPLICATION AFTER IT HAD BEEN PERSISTENTLY REJECTED, must be strictly construed against the inventor and looked upon as disclaimers. (Citations omitted.) The patentee is therefore estopped to claim the benefit of his rejected claim or such a construction of his amended claim as would be equivalent thereto." (Emphasis by the Court.)

We must be guided by these principles in our determination of the issue of infringement.

The defendant Gamma admitted that it is engaged in the manufacture of hydroxyquinoline but denied the charge of infringement. This defendant offered no testimony in support of its denial, but rested its defense solely on the testimony offered by the plaintiff. This testimony not only failed to prove the charge of infringement but in fact disproved it.

The accused process was fully described by two private investigators, who, on the instructions of the plaintiff, covertly obtained employment in the plant of the defendant Gamma. The evidence which they gathered during their employment was thereafter made available to one Dr. George Barsky, a chemical engineer, who made a careful study of the process. The investigators and Dr. Barsky testified in the trial of this action.

The successive and concomitant steps of the accused process may be summarized and described as follows: (a) The fusion kettle is charged with a predetermined quantity of caustic soda, four hundred pounds, which is then heated to a temperature of approximately 320° C.; when the caustic soda is MOLTEN the application of external heat is discontinued. (b) Thereafter a predetermined quantity of quinoline-8-sulfonic acid, two hundred pounds, to which fifty pounds of sodium sulphate has been previously added, is introduced into the fusion kettle while the constituents are stirred or agitated; the molten mass is stirred or agitated until the reaction is complete, approximately 15 to 20 minutes. (c) When the reaction is complete the molten mass is dissolved in a quantity of water to which there is added sufficient sulphuric acid to insure solution. (d) The mixture is then cooled and filtered. (e) The filtrate is thereafter heated to a temperature of approximately 75° C. and neutralized by the addition of a suitable alkali, sodium carbonate or sodium hydroxide. (f) The hydroxyquinoline, which is isolated from the sodium salt of hydroxyquinoline upon neutralization of the filtrate, is recovered by distillation. The reaction temper-

ature is maintained within the known limits employed in the process of the prior art, to wit, 317° C. to 321° C.

It should be observed that in step (b) of the accused process sodium sulphate is added to the quinoline-8-sulfonic acid BEFORE its introduction into the fusion kettle. The sodium sulphate functions solely as a TEMPERATURE MODERATOR which absorbs the heat generated by the exothermic reaction; it does not, however, decrease the temperature of the reaction. The temperature of reaction is maintained within the limits of 317° C. notwithstanding the addition of the sodium sulphate. This conclusion is supported not only by the testimony of the investigators but also by the unequivocal testimony of Dr. Barsky, the chemical engineer called as a witness by the plaintiff.

The accused process, upon cursory examination, would appear to infringe the process of the patent in suit, but this is not the fact. The similarity is clearly confined to those steps which are common to both the process of the patent and the process of the prior art; these steps are embodied also in the accused process. The accused process and the process of the patent are otherwise dissimilar; the former does not embrace two critical features of the latter, to wit, the maintenance of the reaction temperature within the limits defined by the claims in suit and the promotion of the reaction while the constituents are in a "semi-solid," as distinguished from a "molten", state. These conditions are described in the specification as pivotal and were urged by the patentees in support of their claim to patentable invention. It was these features which, according to the affidavit of Grier, *supra*, distinguished the process of the patent from the process of Fischer.

The plaintiff, relying on the doctrine of equivalents, argues that the introduction of the sodium sulphate, in the manner employed by the defendant, effectively reduces the temperature of the fusion mass so that at the

time of reaction the temperature is within the range defined by the claims in suit. The argument is refuted by the testimony.

The investigators testified: first, that the charge of caustic soda was heated to a temperature of approximately 315° C., and that thereafter the mixture of quinoline-8-sulfonic acid and sodium sulphate was introduced; second, that during the reaction the mixture in the fusion kettle was a molten mass of the "consistency of mud"; and third, that the reaction was "violent." Any doubt as to the reaction temperature of the fusion mass is dispelled by the unequivocal testimony of Dr. Barsky.

The accused process was duplicated on a commercial scale in the plant of the plaintiff and under the supervision of Dr. Barsky. His testimony at the trial was based on his observations. He testified: first, that the temperature of the caustic soda was at 318° C. immediately before the introduction of the mixture of quinoline-8-sulfonic acid and sodium sulphate; second, that upon the introduction of the said mixture the temperature fell to 317° C., but within several minutes rose to 321° C.; third, that the reaction temperature was within the range of 317° C. to 321° C.; fourth, that during the reaction the mixture in the fusion kettle "boiled"; and, fifth, that the reaction was "violent" and that the commercial operation was consequently hazardous. He further testified that the accused process was not as efficient as the patented process.

We are convinced that under these circumstances it cannot be seriously urged that the function of the sodium sulphate in the accused process is to maintain the reaction temperature within the limits defined by the claims in suit. It clearly appears from the testimony of Dr. Barsky that the introduction of the sodium sulphate, in the manner employed by the defendant, did not appreciably affect the reaction temperature. It further appears from his testimony that the fusion mass remained in a "molten" state

notwithstanding the introduction of the sodium sulphate. The sodium sulphate obviously performed the USUAL FUNCTION OF A TEMPERATURE MODERATOR, the utility of which is generally known in the chemical industry. The introduction of the sodium sulphate did not, as the plaintiff here contends, reduce the temperature of reaction.

We are convinced by the testimony here offered by the plaintiff that the accused process does not embrace either the pivotal features of the patented process or their equivalents. The teachings of the patent in suit are, in fact, violated in the practice of the accused process. Therefore, the accused process cannot be held to infringe. *Universal Oil Products Co.* v. *Globe Oil & Refining Co., supra; Wabash Corp.* v. *Ross Electric Corp.*, 187 F. 2d 577, 583, *et seq.*, and the other cases hereinabove cited. Where, as here, the accused process does not embrace those steps which distinguish the patented process from the process of the prior art, the accussed process does not infringe. *Ibid.*

The accused process must be appraised also in the light of the prior art, especially where, as here, the claims of the patent are expressly limited to an improvement on an earlier process. When thus appraised the accused process cannot be held to infringe if its essential elements conform substantially to the elements disclosed by the prior art. *Stafford* v. *Albers Bros. Milling Co.*, 263 Fed. 86; *Wabash Corp.* v. *Ross Electric Corp., supra;* see also *Galion Iron Works & Mfg. Co.* v. *Beckwith Mach. Co.*, 105 F. 2d 941, 942; *Dixie-Vortex Co.* v. *Paper Container Mfg. Co.*, 130 F. 2d 569, 577; *Stewart-Warner Corp.* v. *Lone Star Gas Co.*, 195 F. 2d. 645, 649. The rule is particularly applicable where, as here, the patentee, in response to the objection of the Examiner and to avoid anticipation, adopted and incorporated in his claims limitations not embraced in the accused process.

The successive and concomitant steps of the accused process conform substantially to the successive and concomitant steps of the process disclosed in the prior art: The proportion of caustic soda to quinoline-8-sulfonic acid is within the range disclosed by Fischer; the constituents are maintained in a molten state during the reaction; the reaction temperature is maintained within the range of 317° C. to 321° C., the reaction temperature of the Fischer process; and, the molten mass is dissolved in water to which there is added sufficient mineral acid to insure solution. The only modification is in an operational step, to wit, the introduction of the quinoline-8-sulfonic acid AFTER the caustic soda is heated to the approximate reaction temperature of 320° C.; this modification was disclosed by Lloyd in his article on "Hydrolysis," *supra*. It seems obvious that except for this modification the accused process and the Fischer process are identical. The claims in suit are therefore not infringed.

Unfair Competition

The plaintiff asserts a claim of unfair competition against the defendant Gamma and its officers, Robson and Fischer. The parties are citizens of New Jersey, and therefore the jurisdiction of the Court rests solely on Section 1338(b) of Title 28 U.S.C., 28 U.S.C.A. 1338(b). This section vests in the Court "original jurisdiction of any civil action asserting A CLAIM OF UNFAIR COMPETITION when joined with a SUBSTANTIAL AND RELATED CLAIM under the * * *, patent * * * laws." (Emphasis by the Court.) The claim must therefore be examined in the light of this provision which is determinative of the jurisdiction of the Court.

The claim of unfair competition is predicated on the charge that these defendants illegally acquired and converted to their own use certain trade secrets of the plain-

tiff, to wit, an improved sulfonation process which is not covered by a patent, and, several of the specific steps of the hydrolysis process disclosed by the patent in suit. These processes are not merely the successive steps in a suit process; they are, as we heretofore stated, separate and distinct processes. The claim of unfair competition is obviously based upon two separate and distinct causes of action, the violation of two separate and distinct rights derived from different sources. This Court has jurisdiction of one but not of the other.

The cause of action based upon the allegedly unlawful appropriation and use of the specific steps of the hydrolysis process is related to the claims for infringement of the patent, *supra;* the cause of action based on the alleged unlawful appropriation and use of the sulfonation process is not related to the claim for infringement. Therefore the Court has jurisdiction of the former but lacks jurisdiction of the latter. *Hurn* v. *Oursler,* 289 U.S. 238, 245 *et seq.; Lewis* v. *Vendome Bags,* 108 F. 2d 16; *Newport Industries* v. *Crosby Naval Stores,* 139 F. 2d 611, 612; *Salkind* v. *Scheinman,* 139 F. 2d 895; *Algren Watch Findings Co.* v. *Kalinsky,* 197 F. 2d 69, 71, 72; *Schreyer* v. *Casco Products Corp.,* 190 F. 2d 921, 924. We shall therefore consider only the former cause of action.

The law recognizes a property right in trade secrets, and a court of equity will protect the right against invasion by one who appropriates the trade secrets to his own use in violation of a contractual obligation or confidential relationship. *Stone* v. *Goss,* 55 A. 736; *A. Hollander & Son* v. *Imperial Fur Blending Corp.,* 66 A. 2d 319; *Boost Co.* v. *Faunce,* 80 A. 2d 246, affd. 86 A. 2d 283; *Sun Dial Corp* v. *Rideout,* 96 A. 2d 788; see also *Restatement of the Law, Torts,* Sections 757 and 758. However, in the absence of a contractual obligation the right to further protection terminates upon public disclosure of the trade secret by the owner. *Carver* v. *Harr,* 27 A. 2d 895; *Sandlin* v. *John-*

son, 141 F. 2d 660; *Northup* v. *Reish,* 200 F. 2d 924. The right to protection begins and ends with the life of secrecy.

The grant of the patent was a public disclosure not only of the process defined in the claims but also of any trade secrets described in the specifications. *Sandlin* v. *Johnson, supra; A. O. Smith Corporation* v. *Petroleum Iron Works Co.,* 73 F. 2d 531, 537. The trade secrets, if any, disclosed in the specifications and not claimed as elements of the invention, were dedicated to the public under the patent laws. * * * The patentees had a right, independent of the patent laws, to hold and use their process as a trade secret. They surrendered this right, however, upon full disclosure of their process in return for the patent monopoly. The claim of unfair competition and the claim of infringement are clearly inconsistent insofar as they relate to the same period of time.

The claim of unfair competition can be sustained, if at all, only upon proof that Gamma employed the process of the patent in the manufacture of hydroxyquinoline prior to November 29, 1949, when the patent in suit was granted. The defendant Gamma is, and has been engaged in the manufacture of hydroxyquinoline, but there is no evidence that it was so engaged prior to the grant of the patent. This defendant admits that it acquired possession of the assets of Lenox Laboratories on November 7, 1949, but there is no evidence as to when it commenced commercial operations.

The complaint charges that the officers of Gamma conspired with the officers of Lenox to appropriate and convert to their own use the trade secrets of the plaintiff. This charge is not supported by the evidence.

The plaintiff asserts a claim of unfair competition also against the defendant Lenox Laboratories and its officers Biber, Gerlach and Pecherer, who, like the plaintiff, are citizens of New Jersey. There is no claim of infringement

made against these defendants, and the claim of unfair competition is not related to the claim of infringement made against Gamma. The respective claims relate to different periods of time and are predicated on separate and distinct causes of action. It follows that the Court has no jurisdiction of this claim of unfair competition in the absence of diversity of citizenship. *French Renovating Co.* v. *Ray Renovating Co.*, 170 F. 2d 945. This claim must therefore be dismissed but without prejudice to the right of the plaintiff to pursue an appropriate remedy in a court of competent jurisdiction. This is likewise true of the other claims of unfair competition, to wit, the claim based upon alleged unlawful use of the sulfonation process and the claim based on the alleged unlawful use of certain equipment.

Conclusions

I.

The Court has jurisdiction of the claim for infringement, and of the claim for unfair competition related thereto, under Section 1338 of Title 28 U. S. C., 28 U. S. C. A. 1338. However, the Court lacks jurisdiction over the other claims for unfair competition for two reasons: first, they are not related to the claim for infringement within the meaning of the statute; and second, the parties to this litigation are citizens of New Jersey, and the diversity of citizenship otherwise necessary to the Court's jurisdiction is absent.

II.

The claims of the patent in suit are valid. This determination is based upon the presumption of validity and the absence of sufficient evidence to overcome this presumption.

III.

The accused process employed by the defendant Gamma in its commercial operations does not infringe the claims in suit for the reasons hereinabove stated.

IV.

The claim of infringement and the claim of unfair competition, insofar as they relate to the same subject matter, to wit, the alkali hydrolysis process, and cover the same period of time, are inconsistent. The claim of unfair competition must, therefore, be dismissed. The other claims of unfair competition must also be dismissed for the reasons hereinabove stated.

V.

The parties shall prepare and submit to the Court an appropriate order for judgment.